3. Effect of Yogasanas and Pranayama on Physiological Parameters of Female Students

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Abstract

The aim of the present investigation was to find out the effect of yogasanas and pranayama on physiological parameters of female students. Forty female students were selected at random by purposive sampling technique, from Lokmanya Mahavidyalaya Warora, Dist. Chandrapur (M.S.). Twenty female students were assigned as experimental group and another 20 female students were assigned as control group during the academic year 2012-2013. They were the students of B.A. and B. Com. Integrated Course and their age ranged from 19 to 21 years. The participants selected for the current investigation were divided randomly into two equal groups called experimental and control, consisting of twenty female students in each group. Seven weeks of yogasanas and pranayama training programme were given to the experimental group. The control group was not permissible to participate in any of the training programmes. Measurements for the variables were taken at the beginning pretest and at the end of the experimental period, after seven weeks posttest the data were collected for all the variables from both groups. The experimental group undergoes their yogasanas and pranayama training programme five days a week for seven weeks. On the training days, practices lasted in the morning from 7.00 to 8.00 A.M. approximately. The control group did not participate in any specific training. The data obtained from the Experimental group before and after the experimental period were statistically carried out with descriptive statistics and paired sample t-test. The level of confidence was fixed at .05 level for all the cases. Results: There was significant difference in systolic blood pressure, diastolic blood pressure, pulse rate and breath holding time between pre and post test experimental group. But not significant difference found in control group between pre and post test. Yogasanas and pranayama training reveals significant improvement during pre test and post test period on physiological parameters when compared to the control group.

Introduction

Yoga is an idealistic method of implement and meditation originating in what is now India 2000-4000 years ago. There are a lot of forms of yoga which change in particular practices, while maintaining the function of directing the mind and body. General fundamentals of several forms include postures (asanas), which are held for a certain period of time, controlled breathing exercises (pranayama) and meditation. Yoga practice has the common purpose of facilitating the growth and combination of the body, mind and breath to produce structural, physiological and psychological effects. Particularly, the expansion of a strong and flexible body which is free of pain, a balanced autonomic nervous system enabling all physiological systems to function optimally and a calm, clear and tranquil mind. Hatha yoga is the nearly everyone general form of yoga practiced in Western societies. It involves asanas to develop strength, flexibility, balance and the co-ordination of the mind, body and breath, in combination with pranayama and meditation exercise to calm the mind and develop self awareness. The different styles of hatha yoga that have developed are characterized by the rate at which asanas are performed, the physical intensity and level of difficulty, the relative emphasis on body alignment and relaxation and the ambient temperature in which it is practiced.[1]

Keywords: Yogasanas, Pranayama, Physiological Parameters

Methodology

Selection of Subjects

In the current investigation, forty female students were selected at random by purposive sampling technique, from Lokmanya Mahavidyalaya Warora, Dist. Chandrapr (M.S.). Twenty female students were assigned as experimental group and another 20 female students were assigned as control group during the academic year 2012-2013. They were the students of B.A. and B. Com. Integrated Course and their age ranged from 19 to 21 years. The physical situation of the participants was assessed by a capable medical practitioner and all the participants were healthy and normal. They were requested to co-operate and participate actively for the same.

Experimental Design and Procedure

The participants selected for the current investigation were divided randomly into two equal groups called experimental and control, consisting of twenty female students in each group. Seven weeks of yogasanas and pranayama training programme were given to the experimental group. The control group was not permissible to participate in any of the training

programmes. Measurements for the variables were taken at the beginning pretest and at the end of the experimental period, after seven weeks posttest the data were collected for all the variables from both groups.

Selection of variables and Test

The variables selected are furnished below.

Sr. No.	Variables	Test
1)	Blood Pressure	Sphygmomanometer and Stethoscope
	a) Systolic blood pressure	
	b) Diastolic blood pressure	
2)	Pulse Rate	Manual
3)	Breath Holding Time	Stop watch

Training Programme

The experimental group undergoes their yogasanas and pranayama training programme five days a week for seven weeks. On the training days, practices lasted in the morning from 7.00 to 8.00 A.M. approximately. The control group did not participate in any specific training.

Warming up: 1) Shoulder rotation, 2) Neck rotation, 3) Hip rotation, 4) Knee bending movements, 5) Ankles loosening movements, 6) Chest expansion.

Asanas: 1) Tatasana, 2) Utkattasan, 3) Artha kati chakarasana, 4) Artha Chakarasan, 5. Uthanasana, 6. Trikonasana, 7. Parivurta Trikonasan, 8. Prasavita pada Uthanasana, 9) Virkshana, 10) Badhmasana, 11) Yoga mudra, 12) Vajrasana, 13) Sasakasana, 14) Suriya Namskar and 15) Savasana

Pranayama: 1) Cheetali (Coolong Pranayama), 2) Cheetkari, 3) Suka purva pranayama, 4) Chandra Pranayama & Suriya and pranayama(Balancing).

Statistical Analysis

The data obtained from the Experimental group before and after the experimental period were statistically carried out with descriptive statistics and paired sample t-test. The level of confidence was fixed at .05 level for all the cases. The data were compiled and analyzed using the Microsoft Excel 2007.

Table-1: Comparison of Systolic blood pressure between pre and post test of experimental and control groups

Group	Test	Mean	Variance	Observations	df	Tt
Experimental	Pretest	123.65	8.34	20	19	13.646*
	Posttest	120.15	8.13	20		
Control	Pretest	123.95	11.52	20	19	0.567
	Posttest	123.7	15.27	20		

*Significant at .05 level. (Table value required for significance at .05 level for 't'-test with df 19 is 2.093)

Table-1 shows that the significant difference in systolic blood pressure between pre and post test experimental group. The obtained 't' value of 13.646 is more than the table value of 2.093 with 19 degree of freedom.

Table-1 shows that the insignificant difference in systolic blood pressure between pre and post test control group. The obtained 't' value of 0.567 is less than the table value of 2.093with 19 degree of freedom.

Table-2: Comparison of diastolic blood pressure between pre and post test of experimental and control groups

Group	Test	Mean	Variance	Observations	df	Tt
Experimental	Pretest	88.65	8.34	20	19	6.784*
	Posttest	85.95	12.47	20		
Control	Pretest	88.45	4.89	20	19	1.453
	Posttest	88.85	7.29	20		

*Significant at .05 level. (Table value required for significance at .05 level for 't'-test with df 19 is 2.093)

Table-2 shows that the significant difference in diastolic blood pressure between pre and post test experimental group. The obtained 't' value of 6.784 is more than the table value of 2.093 with 19 degree of freedom.

Table-2 shows that the insignificant difference in diastolic blood pressure between pre and post test control group. The obtained 't' value of 1.453 is less than the table value of 2.093with 19 degree of freedom.

Table-3: Comparison of Pulse Rate between pre and post test of experimental and control group

Group	Test	Mean	Variance	Observations	df	Tt
Experimental	Pretest	73.65	8.34	20	19	9.200*
	Posttest	70.85	9.82	20		
Control	Pretest	73.95	11.52	20	19	2.027
	Posttest	74.75	15.78	20		

*Significant at .05 level. (Table value required for significance at .05 level for 't'-test with df 19 is 2.093)

Table-3 shows that the significant difference in pulse rate between pre and post test experimental group. The obtained 't' value of 9.200 is more than the table value of 9.200 with 19 degree of freedom.

Table-2 shows that the insignificant difference in pulse rate between pre and post test control group. The obtained 't' value of 2.027 is less than the table value of 2.093with 19 degree of freedom.

Table-4: Comparison of Breath holding time between pre and post test of experimental and control groups

Group	Test	Mean	Variance	Observations	df	Tt
Experimental	Pretest	18.6415	46.30	20	19	7.535*
	Posttest	20.9975	47.16	20		
Control	Pretest	17.49	47.32	20	19	1.978
	Posttest	17.692	45.96	20		

*Significant at .05 level. (Table value required for significance at .05 level for 't'-test with df 19 is 2.093)

Table-4 shows that the significant difference in breath holding time between pre and post test experimental group. The obtained 't' value of 7.535 is more than the table value of 9.200 with 19 degree of freedom.

Table-4 shows that the insignificant difference in breath holding time between pre and post test control group. The obtained 't' value of 1.978 is less than the table value of 2.093with 19 degree of freedom.

Conclusions

Within the limitations of the present study and on the basis of the findings the following conclusions were drawn.

1. There was significant difference in systolic blood pressure, diastolic blood pressure, pulse rate and breath holding time between pre and post test experimental group.
2. There was insignificant difference in systolic blood pressure, diastolic blood pressure, pulse rate and breath holding time between pre and post test control group.
3. Yogasanas and pranayama training reveals significant improvement during pre test and posttest period on physiological parameters when compared to the control group.

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